

**PATENT APPLICATION
ATTORNEY DOCKET NO. Q67951**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Satoshi SHINADA, et al.

Divisional of 09/437,246

Confirmation No.: 7699

Group Art Unit: Not Yet Assigned

Filed: January 25, 2002

Examiner: Not Yet Assigned

For: INK JET PRINTING APPARATUS AND INK CARTRIDGE

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Amend the specification by inserting before the first line the sentence:

This is a divisional of Application No. 09/437,246 filed November 10, 1999; the disclosure of which is incorporated herein by reference.

IN THE CLAIMS:

Please cancel claims 1-44 and 46-49 without prejudice or disclaimer.

Please enter the following amended claim:

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45. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle.

Please add the following new claims:

50. (New) An ink supply system according to claim 45, wherein said first member comprising a protruding rim formed on a surface thereof facing the ink chamber, said protruding rim formed on a surface thereof facing the ink chamber, said protruding rim contacting the ink supply needle of the printing apparatus.

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51. (New) An ink supply system according to claim 50, wherein said first member comprises a hole through which ink flows, said hole being surrounded by said protruding rim, a diameter of said hole is smaller than that of the ink supply needle of the printing apparatus.

52. (New) An ink supply system according to claim 50, wherein said second member comprises a surface facing said first member formed with a convex surface.

53. (New) An ink cartridge for a printing apparatus providing ink to a print head through a tapered ink supply needle, said ink cartridge capable of providing ink to the print head through the ink supply needle, the ink cartridge comprising:

an ink chamber containing ink therein;

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle.

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54. (New) An ink cartridge according to claim 53, wherein said first member comprising a protruding rim formed on a surface thereof facing said ink chamber, said protruding rim contacting the ink supply needle of the printing apparatus.

55. (New) An cartridge according to claim 54, wherein said first member comprises a hole through which ink flows, said hole being surrounded by said protruding rim, a diameter of said hole is smaller than that of the ink supply needle of the printing apparatus.

56. (New) An ink cartridge according to claim 53, wherein said second member comprises a surface facing said first member formed with a convex surface.

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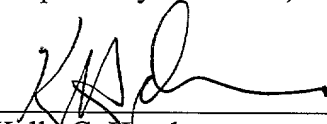
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REMARKS

Claim 45 recites the direction of the sealing. According to this embodiment, because the packing member has a hole, the sealing direction is substantially in a direction in which the valve member is urged against the packing member. On the other hand, in the structure of Barinaga et al. (USP 5,777,646) the sealing direction is in lateral, or horizontal direction. In addition, the instant invention is distinguishable from the valve structure taught in Barinaga et al. because an inner part of the protruding rim 34 of the invention comes into contact with the ink supply needle of the printing apparatus and seal same. The requirement is well-supported by the drawings, and that the diameter of the hole of the packing member is smaller than the diameter of the ink supply needle.

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1-44 and 46-49 are canceled.

The claims are amended as follows:

45. (Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle.

Claims 50-56 are added as new claims.